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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,776	01/21/2004	Raymond Dingleline	050508-1180	3536
24504	7590	11/21/2005	EXAMINER	
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948			SKIBINSKY, ANNA	
			ART UNIT	PAPER NUMBER
			1631	

DATE MAILED: 11/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/761,776

Applicant(s)

DINGLEDINE ET AL.

Examiner

Anna Skibinsky

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**Detailed Action**

***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The instant claims do not recite the physical manipulation of a computer or other physical medium. The recited "literature database" that stores abstracts can be equated to mental memory. Algorithms and mental processes are non-statutory subject matter. Written basis as filed is required for any amendment to the claims that may insert at least one statutory step.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The instant claim recites the method of claim 1, "further including querying gene names ..." It is unclear as to at which point the querying is done. The limitations of this claim, as dependent from claim 1, can be interpreted to mean using "Google" to query the gene names at any point of claim 1. Thus, the wording in claim 3 is vague and indefinite and clarification of the meets and bounds via clearer claim language is requested.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7 and 10-14 are rejected under 35 U.S.C. 102(e) as being unpatentable over Murray et al. (U.S. Patent 6,876,930, filed March 4, 2002, issued April 5, 2003). Murray et al teach a method of characterizing and identifying candidate genes using clustering analysis based on data gathered from literature databases.

The invention of Claim 1 and claims dependent there from are described in Example 10 (col. 27-col. 29) of the prior art reference. A list of gene names (col. 27, lines 60-67) is prepared and queried in a literature database to extract synonyms for each gene name (as in instant claim 1, line 3, claims 2 and 3). The gene names are used (col. 28, lines 1-6) to query relevant databases such as MEDLINE, which is a database of literature abstracts, to identify literature articles (as in instant claim 4).

Relevant words in the articles are then tagged, forming the background set (col. 28, lines 22-25), and in some cases with an algorithm (col. 28, lines 37-39). The words are extracted to form a summary of interaction between two genes (col. 28, lines 60-66 and col. 29, lines 51-67). Thus gene word pair relationships are formed (as in instant

claim 1, line 4) and gene names, even distantly-interacting genes, are grouped (as in instant claim 1, lines 5-7). The tables of genes formed during the information extraction serve as the background set and query set (instant claim 5).

Words, including journal titles are tagged and scored after the literature has been queried (col. 17, line 34 to col. 18, line 2. and col. 28 lines 22-50) which accomplishes the same method step as recited in instant claims 6 and 7.

Additional support for the above rejection can be found in the description of "Information extraction," (col. 6, lines 41-50) and in col. 26, lines 37-38. The prior art also describes the use of stemming and stop word removal (instant claims 10 and 11).

Murray et al. also teach a multi-processor computer and storage subsystem (Fig. 2, col. 8, lines 44 to col. 10 line 9) that store the basic programs and data that provide the functionality of the various systems in the prior art (col. 9, lines 26-28), as in instant claims 12-14. In particular, regarding claim 13, the generation of keywords is the tagging of words in the literature database. The tagged words are those relevant to the gene, which would be words related to the gene's function.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sabatini et al. (U.S. Patent No. 5,966,712) in combination with Murray et al. (U.S. Patent 6,876,930).

Sabatini et al. teach storing and retrieving biological information using gene clustering (col. 11). The limitations of claim 1 recite receiving gene names, associating the names to a word and grouping the gene names with high strength of gene-word relationships. The prior art of Sabatini et al. recites performing a pair-wise comparison of ORF (open reading frame) against other ORF in the same and other libraries (col. 11, lines 22-30). An ORF is known in the art as a "systematic name" of a gene. As recited in the prior art of Sabatini et al., an ORF can also be categorized based on keywords related to its functional category (col 18, lines 12-20). Thus a comparison of ORF relationships, as cited above, is also a gene name to word comparison. The gene clustering is done when a threshold "E-value" is reached, indicating a relationship

between ORFs or genes. Therefore, the prior art of Sabatini et al. reads on the limitations recited in claim 1.

Sabatini et al. do not recite the limitations of claims 2-6 and 10-13, however these limitations are found in Murray et al. who also teach clustering analysis. There is a growing need to query and categorize libraries of literature as it is to query and categorize libraries of ORFs, which are also comprised of text data. Thus, it would be obvious to one skilled in the art that the technology of searching and comparing the test data of ORFs could be combined with the art of Murray et al. extending this query strategy to libraries of literature where words are counted and scored for their frequency of appearance.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Skibinsky whose telephone number is (571) 272-4373. The examiner can normally be reached on 8 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on (571) 272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Ardin H. Marschel 11/14/05*  
**ARDIN H. MARSCHEL**  
**SUPERVISORY PATENT EXAMINER**